

4.8 NOISE

INTRODUCTION

This section evaluates noise impacts from construction and operation of the proposed ProStyle Sports facilities. It discusses the Project's potential to expose the public to high noise levels due to construction, construction traffic operation and maintenance. Operational impacts include both the noise generated from new facilities and the noise impacts of traffic associated with project. To allow an understanding of the impact analysis, the setting section provides information on noise concepts and the existing noise environment. State and local noise policies are discussed as a basis for significance criteria.

IMPACTS EVALUATED IN OTHER SECTIONS

The following items are related to Noise but are evaluated in other sections of this document.

Transportation. Increases in traffic and circulation can lead to increased noise. The volume of additional traffic is discussed in Section 4.6, Transportation.

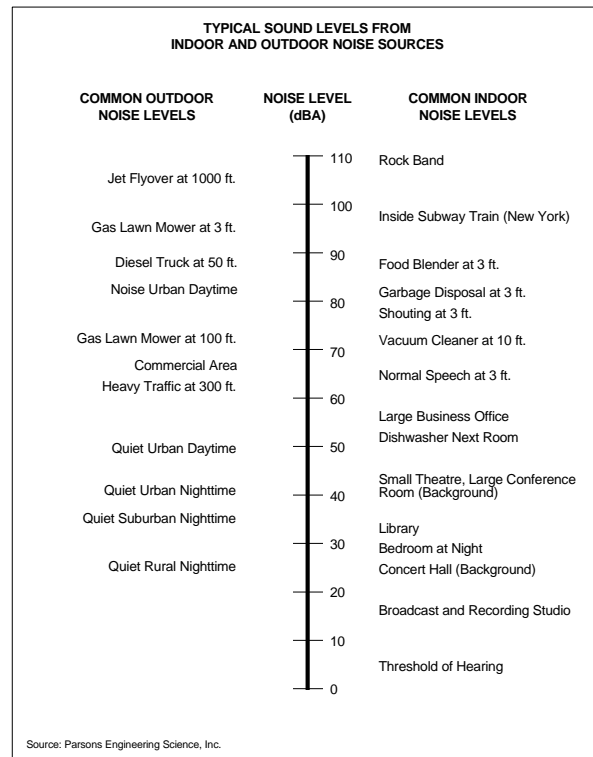
Public Health and Safety: Airport safety issues are discussed in section 4.4, Public Health and Safety.

AFFECTED ENVIRONMENT (SETTING)

Noise is often defined as unwanted sound. Sound is easily measured with instruments, but the human variability in subjective and physical responses to sound complicates the understanding of its impact on people. Sound-pressure level (L_p) is measured and quantified in terms of a logarithmic scale in decibels (dB). Research on human hearing sensitivity has shown that a 3 dB increase in the sound is barely noticeable and a 10 dB increase would be perceived as twice as loud. The human hearing system; however, is not equally sensitive to sound at all frequencies. Therefore, a frequency-dependent adjustment called "A-weighting" has been devised so that sound may be measured in a manner similar to the way the human hearing system responds. The A-weighted sound level is often abbreviated "dBA" or "dB(A)." Figure 4.8-1 provides typical A-weighted sound levels of various noise sources and the responses people usually have to such sound levels.

Community noise levels usually change continuously during the day. However, community noise exhibits a daily, weekly, and yearly pattern. Several descriptors have been developed to compare noise levels over different time periods. The most common descriptors are the energy equivalent sound level (L_{eq}), the maximum noise level (L_{max}), and day-night average sound level (L_{dn}). The L_{eq} is the equivalent steady-state A-

weighted sound level that would contain the same acoustical energy as the time varying A-weighted sound level during the same time interval. The Lmax is the highest instantaneous sound level measured during a single noise measurement interval no matter how long this sound may persist and whether the noise source is ambient or project related. The Ldn is the averaged A-weighted sound level over a 24-hour period with a 10 dB adjustment added to the sound level between 10:00 PM and 7:00 AM. This time weighting is applied in an effort to account for the assumed increased sensitivity to noise intrusions during the nighttime hours. Another measurement unit that is used in California is Community Noise Equivalent Level (CNEL). CNEL is calculated the same way as Ldn; however, it also has a 5 dB adjustment added to the sound level between 7:00 PM and 10:00 PM. CNEL is normally about 1 dB higher than Ldn for typical traffic and other community noise levels.



**Figure 4.8-1
Typical A-Weighted Noise Levels**

The noise environment in the immediate vicinity of the project site is mainly affected by I-5 traffic. The secondary noise sources are from traffic on the local roads. Occasional aircraft flyovers from Kingdon Airpark create high noise levels for a short duration. Kingdon Airpark is a privately owned Basic Utility Stage II airport. The project site is not located under straight approach or takeoff patterns of this airfield. San Joaquin County has developed year 2005 CNEL noise contours for the Kingdon Airpark. According to these contours, the project site is located outside the 65 dBA CNEL contours. The project site is also exposed to various agricultural machinery noise levels during daylight hours of the day.

EVALUATION CRITERIA WITH POINTS OF SIGNIFICANCE

San Joaquin County and the City of Lodi have Noise Elements as well as Noise Ordinances in order to protect the public from potentially excessive noise. While the Noise Element is generally used as a planning guideline, the Noise Ordinance is legally enforceable.

Noise Ordinances of the County of San Joaquin and the City of Lodi mandate noise limits specifically on construction noise and ambient noise levels. Noise Elements of the County of San Joaquin and the City of Lodi provide guidance for project compliance with L_{dn} and CNEL limits. However, the County and City Noise Ordinances do not address peak hour noise limits from roadways. Therefore, FHWA/Caltrans traffic noise criteria shall be used for the noise impacts from roadways during peak hours. Evaluation criteria with points of significance are summarized in Table 4.8-1.

Table 4.8-1

Evaluation Criteria with Points of Significance

Evaluation Criteria	As Measured by	Point of Significance	Justification
1. Will construction of the Project expose the public to high noise levels?	Projected noise levels at residential property line	Noises associated with temporary construction activity occurring between 7:00 am and 7:00 p.m., except Sunday, are specifically exempted from the noise standards	San Joaquin County Development Title - 1995
2. Will operation of the Project expose the public to increased noise levels?	Projected outdoor noise levels at residential land use	Greater than L_{dn} of 65 dBA Greater than CNEL of 65 dBA	County of San Joaquin General Plan City of Lodi
	Projected outdoor noise levels at schools, group care facilities, and hospitals	Greater than L_{dn} of 60 dBA	County of San Joaquin General Plan
	Peak hour traffic noise of L_{eq}	66 dBA	Caltrans

Source: Parsons, 2001

ENVIRONMENTAL CONSEQUENCES (IMPACTS) AND RECOMMENDED MITIGATION

Table 4.8-2

Noise

Evaluation Criteria	As Measured by	Point of Significance	Impact	Type of Impact ¹	Level of Significance ²
1. Will construction of the Project expose the public to high noise levels?	Projected noise levels at residential property line	Temporary construction noises occurring between 7am and 7 p.m., except Sunday, are exempted from the noise standards	Low	C	○
2. Will operation of the Project expose the public to higher noise level?	Projected outdoor noise levels at: residential land use schools, group care facilities, and hospitals Peak hour traffic noise of Leq	Greater than L _{dn} of 65 dBA or CNEL of 65 dBA Greater than L _{dn} of 60 dBA 66 dBA	Low	P	○

Source: Parsons 2001

1. C: Construction P: Permanent

2. Level of Significance Codes

-- Not applicable

== No impact

● Significant impact before and after mitigation

⊙ Significant impact; less than significant after mitigation

○ Less than significant impact; no mitigation proposed

Impact 4.8-1 Will construction of the Project expose the public to high noise levels?

Analysis: *Less than Significant; All Alternatives*

Noise impacts from construction activities of the project are a function of the noise generated by construction equipment, the location and sensitivity of nearby land uses, and the timing and duration of the noise-generating activities

Normally, construction activities are carried out in phases and each phase has its own noise characteristics based on the mix of construction equipment in use. Since the actual construction equipment fleet was not yet made available when this document was prepared, a typical mixture of construction equipment has been assumed for this project. The maximum levels of construction noise for this project are expected to be generated during the foundation phase. Table 4.8-3 presents the noise level of individual equipment and the overall noise level for each of the construction phases at 50, 1,000, and 2,000 feet from the center of the construction activity. Normal construction activities are expected to be operating daily during daytime hours between 7:00 a.m. and 4:00 p.m., except Sundays and Holidays when no construction activity is expected to occur.

The closest sensitive receptor to the proposed project construction site is a residence located on the southeast corner of the proposed project site. The residence is approximately 2,000 feet from the center of construction activity. As presented in Table 4.8-3, the noise levels at the residence would range between 50 and 59 dBA during the various phases of construction activities, with the lowest occurring in the finishing phase and the highest in the foundation phase. Ambient noise levels during project construction would increase at the closest sensitive receptors during the foundation phase. However, the increase is not considered to be significant, as long as these construction activities are to be undertaken only during the daytime hours between 7:00 am and 7:00 pm, Monday through Saturday.

Considering that the distance to the closest sensitive receptors for the Alternate Site alternative would be approximately the same as in the Proposed Project, the level of impacts would be similar.

Based upon the reduced amount of construction activity, the Sport Use Only Alternative is also expected to result in less than significant construction noise impacts.

Table 4.8-3

Predicted Construction Noise Levels

Construction Activity Equipment ¹	Number of Equipment/ Vehicles	Sound Level at 50 ft (dBA)	Effective Usage Factor ²	Leq(h) @ 50 ft (dBA)	Leq(h) @ 1000 ft (dBA)	Leq(h) @ 2000 ft (dBA)
<u>Site Preparation</u>						
Backhoe	2	85	0.15	77	51	45
Front-end Loader	2	85	0.15	77	51	45
Dozer	2	80	0.15	72	46	40
Jackhammer	1	88	0.08	77	51	45
Air Compressor	2	81	0.23	75	49	42
Generator	2	78	0.23	72	46	39
Compactor	2	78	0.15	70	44	38
Trencher	2	82	0.23	76	50	43
Saw (concrete cutting)	2	83	0.15	75	49	43
Concrete truck/mixer	2	85	0.15	77	51	45
Water Truck	2	81	0.15	73	47	41
Semi Dump Truck	2	80	0.15	72	46	40
Front-end loader	2	84	0.15	76	50	44
Overall Leq				86	60	54
<u>Foundation</u>						
Pile Driver (diesel hammer)	1	100	0.11	91	64	58
Concrete Truck/Mixer	2	85	0.15	77	51	45
Concrete Pump	2	82	0.15	74	48	42
Crane	1	83	0.08	72	46	40
Flat-bed Truck	4	84	0.15	76	50	44
Overall Leq				91	65	59
<u>Structure Construction</u>						
Forklift	5	67	0.38	63	37	31
Front-end Loader	2	84	0.23	78	52	45
Crane	2	83	0.15	75	49	43
Welding Machine	3	74	0.23	68	42	35
Flat-bed Truck	3	84	0.11	75	48	42
Concrete Truck/Mixer	2	85	0.08	74	48	42
Semi Dump Truck	2	80	0.08	69	43	37
Overall Leq				82	56	50
<u>Finishing (includes exterior and site finishing)</u>						
Forklift	5	67	0.38	63	37	31
Crane	2	83	0.08	72	46	40
Paver	1	89	0.15	81	55	49
Flat-bed Truck	4	84	0.15	76	50	44
Overall Leq				82	56	50

Source: Parsons Engineering Science, Inc., 2000

Notes:

- 1 - Construction equipment fleet was based on previously completed similar projects.
- 2 - Assuming that the equipment are operating at, or near, their maximum sound levels 30 percent of the time during operation.

Mitigation No mitigation is required.

Impact: **4.8-2 Will operation of the Project expose the public to increased noise levels?**

Analysis: *Less than Significant; All Alternatives*

A detailed operation noise study has not been conducted for the proposed project. The operation noise analysis is based on the assumption that the noise study prepared for the 1995 EIR is valid in projecting worst case noise levels and analyzing the impacts of surrounding noise on the project site.

The 1995 *Environmental Noise Analysis* prepared by Brown-Buntin Associates, Inc. shows that existing noise on the project site is primarily a result of traffic on I-5 and surrounding roadways, with occasional aircraft overflight noise. Existing noise levels ranged from 59.5 to 65.2 L_{eq} at different sample points on the project site, with a maximum sound level of 69.5 L_{max} . This study also analyzed the noise levels resulting from an outdoor sporting event with 5,000 spectators. The maximum noise level expected to occur was estimated to be 85 dB from a distance of 125 feet. Brown-Buntin Associates, Inc. assumed that shouting would take place 20 percent of the time, resulting in an hourly L_{eq} of 78 dB at a distance of 125 feet. The hourly L_{eq} associated with shouting would be approximately 60 dB at the nearest residence. Based on a maximum of 5,000 people shouting over a period of eight hours, the estimated L_{dn} would be 55 dB at the nearest residence, which does not exceed the City or County standards for noise levels. In addition, worst case hourly parking noise levels were estimated to have an L_{eq} between 45 and 49 dB, which is less than current ambient noise levels. Therefore, no significant noise impact would result from operation of the facility.

With the assumption that the previous noise study is valid, there will be no operational noise impact resulting from the operation of the proposed project. All points of significance outlined in Table 4.8-1 are not expected to be exceeded. Therefore, no significant level of impacts are expected for the proposed project. However, it must be noted that based on updated traffic data, in order to more accurately assess the operation impacts, an updated noise study should be considered.

Given that the above assumption on the validity of the noise study conducted for the 1995 EIR still holds true for the proposed project, there would also be no significant impacts for the operation of the Sports Use Only Alternative.

Significant impacts are not expected for the Alternate Site alternative either, considering similar arrangement of the sports complex and similar proximity to sensitive receptors.

Mitigation: No mitigation is necessary.

CUMULATIVE IMPACTS

The closest project in the City of Lodi is the Home Depot project located over five miles northeast of the project site on the northwest corner of Highway 12 and Lower Sacramento Road. The Flying J Truck Stop is proposed for the northeast corner of I-5 and Highway 12. The truck stop will be equipped with fueling stations, a restaurant, restrooms, rest area, and other similar amenities associated with a truck stop/rest area. Flag City will contain a 51 unit hotel and 181 unit RV park. Another project is located further east on Highway 12 and would result in the construction of a 157 unit RV park. The County Public Works Department is preparing the fourth project, which would result in a realignment of Thornton Road at Highway 12 near the Flag City and Flying J truck stop areas.

Since the other projects proposed in the area are over 1.5 miles from this site, the cumulative impact from these projects would not be noticeable at the Lodi ProStyle Sports Complex site, and therefore, would not result in an additional impact.